Expected RESULTS

- Release and spread of biological controls
- Sustained fire ant control
- Lower livestock production costs
- Increased farm worker safety
- Reduced pesticide risk
- Restored ecological balance among native ants, birds, and wildlife

USDA-ARS

AREAWIDE SUPPRESSION OF FIRE ANTS

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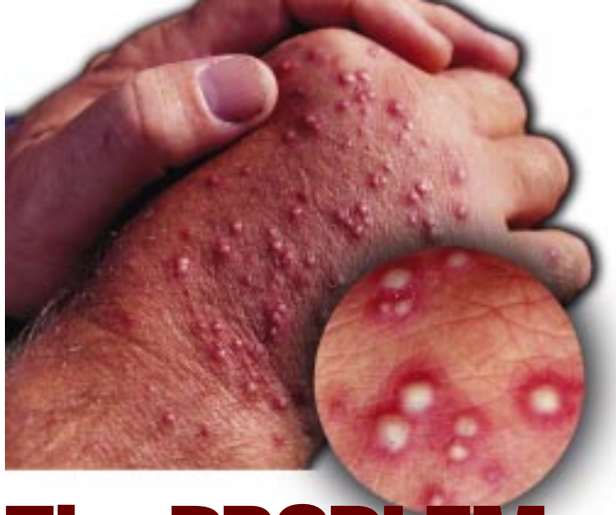


The PROBLEM

The red imported fire ant was accidentally introduced into the United States and now infests 321 million acres in 13 states and Puerto Rico. None of the biological control organisms that kill fire ants in their native South America were brought with them to the States. As a result, fire ants cause serious medical and agricultural problems to people, animals, and equipment because of their potent sting and large populations. Damage to pastures is especially difficult because fire ants are expensive to control over the large acreage needed to feed livestock.

Problems Caused by Imported Fire Ants

Agricultural:
- Higher production costs
- Increased risk of pesticides used to control fire ants

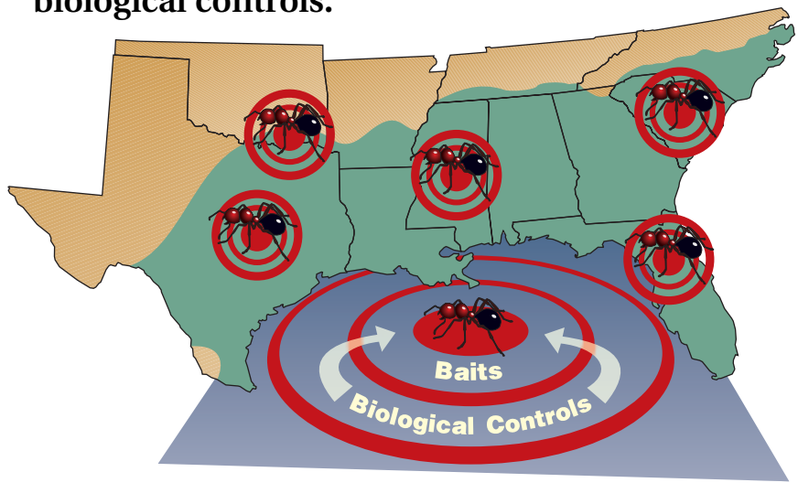
Medical/Veterinary:
- Sting people and pets
- Attack livestock and wildlife

Equipment:
- Short out electrical equipment
- Damage mowers and agricultural equipment

Ecological:
- Kill and eat ground-nesting birds and mammals
- Destroy predators and parasites of pests

The GOAL

To demonstrate practical, **long-term** control of fire ants over a large area using **baits** and **biological controls.**



The PROGRAM

Cooperating States:
- Florida, Mississippi , Oklahoma, South Carolina and Texas

Locations:
- Two 300-acre sites of improved pasture in each cooperating state with heavy fire ant infestations

Treatments:
- Aerially applied mixture of two baits
- Biological controls — release two organisms that help control fire ants in South America

What will happen:
Fire ant populations are reduced by aerially applying baits to each 300-acre pasture. Biological controls are released around the treated area. They weaken and kill fire ants, allowing native ants to repopulate. This program should provide sustainable control, reducing the need for repeated applications of expensive fire ant treatments.

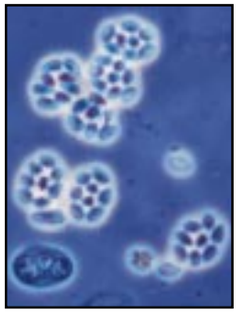
Two Baits
Baits are a very effective, but expensive, method of controlling existing fire ant colonies. USDA-ARS has worked to make oil-based baits commercially available to the public. Baits do not harm wildlife because they break down in sunlight.

Fire ant carries bait back to the mound

Two baits are combined to provide fast-acting and long-term control of fire ants. **Hydramethylnon** bait kills ants within three to five weeks. **Methoprene** bait sterilizes ant reproductives and prevents larvae from developing normally. Effects are slow, but control lasts for months.

Two Biological Controls
Biological control organisms kill fire ants in their native South America, but they were only recently brought to the United States. USDA-ARS has imported, isolated, and mass-produced these biological control organisms for release.

A decapitating fly, *Pseudacteon tricuspis,* attacks fire ant workers and causes them to hide instead of feed. Female flies lay eggs that develop inside the fire ant head, causing the head to fall off. Adult flies emerge from the severed head and attack other fire ants.



A fire ant disease, *Thelohania solenopsae,* is introduced into colonies by putting infected fire ant larvae in the mound. The disease is caused by a protozoan that weakens the colony. Weakened colonies mean fewer fire ant reproductives to start new colonies.